

APPENDIX F

KAUAI PROJECT SHEETS





Kauai Regional ITS Architecture

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PROJECT DETAILS: HDOT-AIR-K TRAVELER INFORMATION KIOSK

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-AIR-K Traveler Information Kiosk
Description:	This project will add a traveler information kiosk at baggage claim and tie into the Flight Information Display System (FIDS) at baggage claim.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-8
Stakeholders:	Hawaii Department of Transportation, Airports Division, Kauai District
Service Packages:	ATIS01-2 - Broadcast Traveler Information - HDOT Airports, Kauai District (HDOT-AIR-K)
Project Inventory:	HDOT-AIR-K Flight Information Display System HDOT-AIR-K Traveler Information Kiosk

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Basic Information Broadcast](#)

- The center shall disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.
- The center shall disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.

[Remote Basic Information Reception](#)

- The public interface for travelers shall receive traffic information from a center and present it to the traveler.
- The public interface for travelers shall receive transit information from a center and present it to the traveler.

[Remote Interactive Information Reception](#)

- The public interface for travelers shall receive transit information from a center and present it to the traveler upon request.
- The public interface for travelers shall receive yellow pages information (such as lodging, restaurants, theaters, bicycle facilities, and other tourist activities) from a center and present it to the traveler upon request.
- The public interface for travelers shall receive event information from a center and present it to the traveler upon request.
- The public interface for travelers shall receive wide-area alerts and present it to the traveler.

- ➔ The public interface for travelers shall provide digitized map data to act as the background to the information presented to the traveler.
- ➔ The public interface for travelers shall present information to the traveler in audible or visual forms consistent with a kiosk, including those that are suitable for travelers with hearing or vision physical disabilities.

INTERFACES

Source	Architecture Flows	Destination
HDOT-AIR-K Flight Information Display System	broadcast traveler information	HDOT-AIR-K Traveler Information Kiosk

ITS STANDARDS

SDO	Document ID	Title	Type
ASTM/IEEE/SAE	View List	Dedicated Short Range Communication at 5.9 GHz Standards Group	Group
SAE	View List	Advanced Traveler Information Systems (ATIS) General Use Standards Group	Group
SAE	View List	Advanced Traveler Information Systems (ATIS) Bandwidth Limited Standards Group	Group

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Airports Division, Kauai District	Disseminate traveler information through traveler information kiosks at the Lihue Airport.

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PROJECT DETAILS: HDOT-AIR-K WIRELESS COMMUNICATIONS UPGRADE

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-AIR-K Wireless Communications Upgrade
Description:	This project will upgrade wireless communications for the Kauai Airport.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-10
Stakeholders:	Hawaii Department of Transportation, Airports Division, Kauai District
Service Packages:	EM01-3 - Emergency Call-Taking and Dispatch - HDOT-AIR-K/ARFF
Project Inventory:	HDOT-AIR-K Security Dispatch Center HDOT-AIR-K/ARFF Dispatch HDOT-AIR-K/ARFF Fire/Rescue Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Dispatch](#)

- The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.
- The center shall relay location and incident details to the responding vehicles.
- The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
- The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.
- The center shall relay location and incident details to the responding vehicles.
- The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.

[On-board EV En Route Support](#)

- The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.
- The emergency vehicle shall track its current location.

→ The emergency vehicle shall send the vehicle's location and operational data to the center for emergency management and dispatch.

INTERFACES

Source	Architecture Flows	Destination
HDOT-AIR-K Security Dispatch Center	emergency dispatch requests	HDOT-AIR-K/ARFF Fire/Rescue Vehicles
HDOT-AIR-K/ARFF Dispatch	emergency dispatch requests	HDOT-AIR-K/ARFF Fire/Rescue Vehicles
HDOT-AIR-K/ARFF Fire/Rescue Vehicles	emergency dispatch response	HDOT-AIR-K Security Dispatch Center
HDOT-AIR-K/ARFF Fire/Rescue Vehicles	emergency vehicle tracking data	HDOT-AIR-K Security Dispatch Center
HDOT-AIR-K/ARFF Fire/Rescue Vehicles	emergency dispatch response	HDOT-AIR-K/ARFF Dispatch
HDOT-AIR-K/ARFF Fire/Rescue Vehicles	emergency vehicle tracking data	HDOT-AIR-K/ARFF Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Airports Division, Kauai District	Dispatch HDOT-AIR-K/ARFF fire and emergency vehicles in respond to emergencies and incidents at the Lihue Airport. Provide emergency response, including fire and emergency response for Lihue Airport.

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▶ PROJECT DETAILS: HDOT-HAR-K EMERGENCY AND TRAFFIC COORDINATION

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HAR-K Emergency and Traffic Coordination
Description:	This project will establish a connection between the Harbor Security Office, the EOC and the HDOT-HWY-K's desired traffic operations center (TOC).
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-15
Stakeholders:	County of Kauai - Civil Defense Agency Hawaii Department of Transportation, Highways Division, Kauai District Hawaii Department of Transportation, Harbors Division, Kauai District
Service Packages:	EM05-1 - Transportation Infrastructure Protection - HDOT Harbors, Kauai District (HDOT-HAR-K) EM07-1 - Early Warning System - Kauai EOC EM08-1 - Disaster Response and Recovery - Kauai Emergency Operations Center (1 of 3) EM08-4 - Disaster Response and Recovery - HDOT
Project Inventory:	HDOT-HAR-K Security Center HDOT-HWY-K Traffic Control Center Kauai EOC

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Response Management](#)

- ◆ The center shall provide strategic emergency response capabilities provided by an Emergency Operations Center for large-scale incidents and disasters.
- ◆ The center shall manage coordinated inter-agency responses to and recovery from large-scale emergencies. Such agencies include traffic management, transit, maintenance and construction management, rail operations, and other emergency management agencies.
- ◆ The center shall provide the capability to implement response plans and track progress through the incident by exchanging incident information and response status with allied agencies.
- ◆ The center shall develop, coordinate with other agencies, and store emergency response plans.
- ◆ The center shall track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
- ◆ The center shall allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.
- ◆ The center shall provide the capability to implement response plans and track progress through the incident by exchanging incident information and response status with allied agencies.

Incident Command

- ◆ The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
- ◆ The center shall share incident command information with other public safety agencies including resource deployment status, hazardous material information, rail incident information, evacuation advice as well as traffic, road, and weather conditions.

TMC Incident Detection

- ◆ The center shall collect and store traffic flow and image data from the field equipment to detect and verify incidents.
- ◆ The center shall receive inputs concerning upcoming events that would effect the traffic network from event promoters and traveler information service providers.
- ◆ The center shall exchange incident and threat information with emergency management centers as well as maintenance and construction centers; including notification of existence of incident and expected severity, location, time and nature of incident.

TMC Incident Dispatch Coordination/Communication

- ◆ The center shall exchange alert information and status with emergency management centers. The information includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public. The information may include the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, and information and instructions necessary for the public to respond to the alert. This may also identify specific information that should not be released to the public.
- ◆ The center shall coordinate planning for incidents with emergency management centers - including pre-planning activities for disaster response, evacuation, and recovery operations.
- ◆ The center shall share resources with allied agency centers to implement special traffic control measures, assist in clean up, verify an incident, etc. This may also involve coordination with maintenance centers.
- ◆ The center shall receive inputs concerning upcoming events that would effect the traffic network from event promoters, traveler information service providers, media, border crossings, and rail operations centers.
- ◆ The center shall provide road network conditions and traffic images to emergency management centers, maintenance and construction centers, and traveler information service providers.
- ◆ The center shall monitor incident response performance and calculate incident response and clearance times.
- ◆ The center shall exchange road network status assessment information with emergency management and maintenance centers including an assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.
- ◆ The center shall coordinate information and controls with other traffic management centers.
- ◆ The center shall receive inputs from emergency management and transit management centers to develop an overall status of the transportation system including emergency transit schedules in effect and current status and condition of the transportation infrastructure.

INTERFACES

Source	Architecture Flows	Destination
HDOT-HAR-K Security Center	emergency traffic control request	HDOT-HWY-K Traffic Control Center
HDOT-HAR-K Security Center	transportation system status	HDOT-HWY-K Traffic Control Center
HDOT-HAR-K Security Center	incident report	Kauai EOC
HDOT-HAR-K Security Center	incident response coordination	Kauai EOC
HDOT-HAR-K Security Center	emergency plan coordination	Kauai EOC
HDOT-HAR-K Security Center	resource coordination	Kauai EOC
HDOT-HAR-K Security Center	transportation system status	Kauai EOC
HDOT-HAR-K Security Center	incident command information coordination	Kauai EOC
HDOT-HWY-K Traffic Control Center	emergency traffic control information	HDOT-HAR-K Security Center
HDOT-HWY-K Traffic Control Center	road network conditions	HDOT-HAR-K Security Center
HDOT-HWY-K Traffic Control Center	road network status assessment	HDOT-HAR-K Security Center
HDOT-HWY-K Traffic Control Center	emergency traffic control information	Kauai EOC
HDOT-HWY-K Traffic Control Center	resource deployment status	Kauai EOC
HDOT-HWY-K Traffic Control Center	road network conditions	Kauai EOC
HDOT-HWY-K Traffic Control Center	emergency plan coordination	Kauai EOC
HDOT-HWY-K Traffic Control Center	road network status assessment	Kauai EOC
Kauai EOC	incident response coordination	HDOT-HAR-K Security Center
Kauai EOC	emergency plan coordination	HDOT-HAR-K Security Center
Kauai EOC	resource coordination	HDOT-HAR-K Security Center
Kauai EOC	transportation system status	HDOT-HAR-K Security Center

Kauai EOC	incident command information coordination	HDOT-HAR-K Security Center
Kauai EOC	emergency traffic control request	HDOT-HWY-K Traffic Control Center
Kauai EOC	incident response status	HDOT-HWY-K Traffic Control Center
Kauai EOC	resource request	HDOT-HWY-K Traffic Control Center
Kauai EOC	transportation system status	HDOT-HWY-K Traffic Control Center

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
IEEE	View List	Incident Management Standards Group	Group
SAE	View List	Advanced Traveler Information Systems (ATIS) General Use Standards Group	Group
AASHTO/ITE	ITE TMDD	Traffic Management Data Dictionary (TMDD) and Message Sets for External Traffic Management Center Communications (MS/ETMCC)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1211	Object Definitions for Signal Control and Prioritization (SCP)	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Civil Defense Agency	Coordinate emergency plans and maintenance resources with HDOT-HWY-K Maintenance and County of Kauai DPW Maintenance.
	Operate the County EOC, including incident coordination with emergency management providers.
	Participate in incident response, coordination and reporting.
Hawaii Department of Transportation, Highways Division, Kauai District	Coordinate incident and threat information with the Kauai EOC.
	Send traffic/incident information and traffic images to 911 Center, Kauai Fire and the Kauai EOC.
Hawaii Department of Transportation, Harbors Division, Kauai District	Coordinate emergency plans, evacuation and reentry plans, and disaster management plans with the Kauai EOC.
	Coordinate incident and threat information with the Kauai EOC.

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PROJECT DETAILS: HDOT-HAR-K SECURITY TRAILER

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HAR-K Security Trailer
Description:	This project will construct a security trailer with a consolidated Security Office at Nawiliwili that operates 24/7 with adequate staff to monitor video from all CCTV cameras; ensure access to camera images regardless of vendor using a video distribution system.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-14
Stakeholders:	Hawaii Department of Transportation, Harbors Division, Kauai District
Service Packages:	EM05-1 - Transportation Infrastructure Protection - HDOT Harbors, Kauai District (HDOT-HAR-K)
Project Inventory:	HDOT-HAR-K Infrastructure Monitoring Equipment HDOT-HAR-K Security Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Center Secure Area Surveillance](#)

- The center shall identify potential security threats based on collected security surveillance data.
- The center shall remotely monitor video images and audio surveillance data collected in secure areas including facilities and transportation infrastructure. The data may be raw or pre-processed in the field.

[Field Secure Area Surveillance](#)

- The field element shall be remotely controlled by a center.
- The field element shall provide equipment status and fault indication of surveillance equipment to a center.
- The field element shall provide raw video or audio data.
- The field element shall include video and/or audio surveillance of secure areas including facilities and transportation infrastructure.

INTERFACES

Source	Architecture Flows	Destination
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HDOT-HAR-K Infrastructure Monitoring Equipment	secure area surveillance data	HDOT-HAR-K Security Center
HDOT-HAR-K Security Center	secure area surveillance control	HDOT-HAR-K Infrastructure Monitoring Equipment

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Harbors Division, Kauai District	Perform video surveillance of secure areas within harbor facilities.

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PROJECT DETAILS: HDOT-HWY-K CLOSED CIRCUIT TELEVISION (CCTV)

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HWY-K Closed Circuit Television (CCTV)
Description:	This project will add CCTV at state intersections in Kauai.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-3
Stakeholders:	Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	ATMS01-1 - Network Surveillance - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Field Devices HDOT-HWY-K Traffic Control Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Collect Traffic Surveillance](#)

- ➔ The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.

[Roadway Basic Surveillance](#)

- ➔ The field element shall collect, process, and send traffic images to the center for further analysis and distribution.
- ➔ The field element shall return sensor and CCTV system operational status to the controlling center.

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Field Devices	traffic images	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Traffic Control Center	video surveillance control	HDOT-HWY-K Field Devices

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group

AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Highways Division, Kauai District	Obtain traffic images and traffic flow data through CCTVs and field sensors and maintain operational control of its own field equipment.

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PROJECT DETAILS: HDOT-HWY-K TRAFFIC CONTROL CENTER (TCC)

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HWY-K Traffic Control Center (TCC)
Description:	This project will create a traffic control center from which State traffic signals and other ITS equipment will be monitored. The center will include connections to the Kauai 911 Dispatch Center and Kauai EOC.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-4
Stakeholders:	Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	ATMS01-1 - Network Surveillance - HDOT Highways Kauai District (HDOT-HWY-K) ATMS03-1 - Traffic Signal Control - HDOT Highways Kauai District (HDOT-HWY-K) ATMS06-1 - Traffic Information Dissemination - HDOT Highways Kauai District (HDOT-HWY-K) ATMS08-1 - Traffic Incident Management System - HDOT Highways Kauai District (HDOT-HWY-K) ATMS19-1 - Speed Warning and Enforcement - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Field Devices HDOT-HWY-K Traffic Control Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Collect Traffic Surveillance](#)

- The center shall monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.
- The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.

[Roadway Basic Surveillance](#)

- The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.
- The field element shall collect, process, and send traffic images to the center for further analysis and distribution.
- The field element shall return sensor and CCTV system operational status to the controlling center.

[Roadway Signal Controls](#)

- The field element shall control traffic signals under center control.
- The field element shall report the current signal control information to the center.

- The field element shall return traffic signal controller operational status to the center.

Roadway Speed Monitoring and Warning

- The field element shall include sensors to detect vehicle speeds, under traffic or maintenance center control.
- If the speed detected by vehicle speed sensors is determined to be excessive, the field element shall provide a safe speed advisory to passing drivers via a driver information system (such as portable messages signs, field to vehicle communications to in-vehicle signing systems, etc.).
- The field element shall return operational status for the vehicle speed sensors to the enforcement agency.
- The field element shall return fault data for the vehicle speed sensors to the controlling center for repair.

Roadway Traffic Information Dissemination

- The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display (s) (e.g. vehicle restrictions, or lane open/close).

TMC Incident Detection

- The center shall collect and store traffic flow and image data from the field equipment to detect and verify incidents.
- The center shall receive inputs concerning upcoming events that would effect the traffic network from event promoters and traveler information service providers.
- The center shall exchange incident and threat information with emergency management centers as well as maintenance and construction centers; including notification of existence of incident and expected severity, location, time and nature of incident.

TMC Incident Dispatch Coordination/Communication

- The center shall exchange alert information and status with emergency management centers. The information includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public. The information may include the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, and information and instructions necessary for the public to respond to the alert. This may also identify specific information that should not be released to the public.
- The center shall coordinate planning for incidents with emergency management centers - including pre-planning activities for disaster response, evacuation, and recovery operations.
- The center shall share resources with allied agency centers to implement special traffic control measures, assist in clean up, verify an incident, etc. This may also involve coordination with maintenance centers.
- The center shall receive inputs concerning upcoming events that would effect the traffic network from event promoters, traveler information service providers, media, border crossings, and rail operations centers.
- The center shall provide road network conditions and traffic images to emergency management centers, maintenance and construction centers, and traveler information service providers.
- The center shall monitor incident response performance and calculate incident response and clearance times.
- The center shall exchange road network status assessment information with emergency management and maintenance centers including an assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.
- The center shall coordinate information and controls with other traffic management centers.
- The center shall receive inputs from emergency management and transit management centers to develop an overall status of the transportation system including emergency transit schedules in effect and current status and condition of the transportation infrastructure.

TMC Signal Control

- The center shall remotely control traffic signal controllers.
- The center shall collect traffic signal controller operational status and compare against the control information sent by the center.
- The center shall collect traffic signal controller fault data from the field.
- The center shall manage (define, store and modify) control plans to coordinate signalized intersections, to be engaged at the direction of center personnel or according to a daily schedule.
- The center shall implement control plans to coordinate signalized intersections based on data from sensors.
- The center shall manage boundaries of the control sections used within the signal system.
- The center shall maintain traffic signal coordination including synchronizing clocks throughout the system.

TMC Traffic Information Dissemination

- The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
- The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).

INTERFACES

Source	Architecture Flows	Destination
Event Generators	event plans	HDOT-HWY-K Traffic Control Center
HDOT-HAR-K Security Center	emergency traffic control request	HDOT-HWY-K Traffic Control Center
HDOT-HAR-K Security Center	transportation system status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	right-of-way request notification	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center

HDOT-HWY-K Field Devices	signal control status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	traffic flow	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	traffic images	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	speed monitoring information	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	signal fault data	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Traffic Control Center	incident information	GoAkamai
HDOT-HWY-K Traffic Control Center	traffic images	GoAkamai
HDOT-HWY-K Traffic Control Center	road network conditions	GoAkamai
HDOT-HWY-K Traffic Control Center	emergency traffic control information	HDOT-HAR-K Security Center
HDOT-HWY-K Traffic Control Center	road network conditions	HDOT-HAR-K Security Center
HDOT-HWY-K Traffic Control Center	road network status assessment	HDOT-HAR-K Security Center
HDOT-HWY-K Traffic Control Center	roadway information system data	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	traffic sensor control	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control commands	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	speed monitoring control	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	video surveillance control	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control device configuration	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control plans	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal system configuration	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	emergency traffic control information	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	incident information	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	incident response status	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	resource deployment status	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	resource request	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	traffic images	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	road network conditions	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	alert status	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	emergency routes	Kauai 911 Dispatch Center
HDOT-HWY-K Traffic Control Center	request transit information	Kauai Bus Fixed Route Dispatch
HDOT-HWY-K Traffic Control Center	traffic control priority status	Kauai Bus Fixed Route Dispatch
HDOT-HWY-K Traffic Control Center	roadway information system data	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	traffic sensor control	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	signal control commands	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	video surveillance control	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	signal control device configuration	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	signal control plans	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	signal system configuration	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	emergency traffic control information	Kauai EOC
HDOT-HWY-K Traffic Control Center	incident information	Kauai EOC
HDOT-HWY-K Traffic Control Center	resource deployment status	Kauai EOC
HDOT-HWY-K Traffic Control Center	road network conditions	Kauai EOC
HDOT-HWY-K Traffic Control Center	emergency plan coordination	Kauai EOC
HDOT-HWY-K Traffic Control Center	road network status assessment	Kauai EOC
HDOT-HWY-K Traffic Control Center	parking lot data request	Kauai Parking and Access Management
HDOT-HWY-K Traffic Control Center	traffic information for media	Media
Kauai 911 Dispatch Center	emergency traffic control request	HDOT-HWY-K Traffic Control Center
Kauai 911 Dispatch Center	incident information	HDOT-HWY-K Traffic Control Center
Kauai 911 Dispatch Center	incident response status	HDOT-HWY-K Traffic Control Center

Kauai 911 Dispatch Center	remote surveillance control	HDOT-HWY-K Traffic Control Center
Kauai 911 Dispatch Center	resource deployment status	HDOT-HWY-K Traffic Control Center
Kauai 911 Dispatch Center	resource request	HDOT-HWY-K Traffic Control Center
Kauai 911 Dispatch Center	alert notification	HDOT-HWY-K Traffic Control Center
Kauai 911 Dispatch Center	emergency route request	HDOT-HWY-K Traffic Control Center
Kauai Bus Fixed Route Dispatch	traffic control priority request	HDOT-HWY-K Traffic Control Center
Kauai Bus Fixed Route Dispatch	transit system data	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	right-of-way request notification	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	signal control status	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	traffic flow	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	traffic images	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	signal fault data	HDOT-HWY-K Traffic Control Center
Kauai EOC	emergency traffic control request	HDOT-HWY-K Traffic Control Center
Kauai EOC	incident information	HDOT-HWY-K Traffic Control Center
Kauai EOC	incident response status	HDOT-HWY-K Traffic Control Center
Kauai EOC	resource request	HDOT-HWY-K Traffic Control Center
Kauai EOC	emergency plan coordination	HDOT-HWY-K Traffic Control Center
Kauai EOC	evacuation information	HDOT-HWY-K Traffic Control Center
Kauai EOC	threat information	HDOT-HWY-K Traffic Control Center
Kauai EOC	transportation system status	HDOT-HWY-K Traffic Control Center
Kauai Parking and Access Management	parking information	HDOT-HWY-K Traffic Control Center

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
IEEE	View List	Incident Management Standards Group	Group
SAE	View List	Advanced Traveler Information Systems (ATIS) General Use Standards Group	Group
AASHTO/ITE	ITE TMDD	Traffic Management Data Dictionary (TMDD) and Message Sets for External Traffic Management Center Communications (MS/ETMCC)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1202	Object Definitions for Actuated Traffic Signal Controller (ASC) Units	Message/Data
AASHTO/ITE/NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
AASHTO/ITE/NEMA	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1210	Field Management Stations (FMS) - Part 1: Object Definitions for Signal System Masters	Message/Data
AASHTO/ITE/NEMA	NTCIP 1211	Object Definitions for Signal Control and Prioritization (SCP)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1214	Object Definitions for Conflict Monitor Units (CMU)	Message/Data
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Highways Division, Kauai District	Obtain traffic images and traffic flow data through CCTVs and field sensors and maintain operational control of its own field equipment.
	Operate changeable speed limit signs, including collecting traffic count information from the devices.

Operate traffic signal systems for State owned intersections.
Provide incident information to travelers via traffic information devices on state roads.
Provide traffic information to travelers via HDOT DMS equipment.
Send traffic/incident information and traffic images to 911 Center, Kauai Fire and the Kauai EOC.

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PROJECT DETAILS: KAUAI BUS WIFI

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Bus WiFi
Description:	This project will add WiFi connectivity on every bus and at every Kauai Bus stop.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-24
Stakeholders:	Kauai County Transportation Agency
Service Packages:	APTS08-1 - Transit Traveler Information - Kauai Bus
Project Inventory:	Kauai Bus Fixed Route Dispatch Kauai Bus Fixed Route Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

INTERFACES

Source	Architecture Flows	Destination
Kauai Bus Fixed Route Dispatch	transit traveler information	Kauai Bus Fixed Route Vehicles
Kauai Bus Fixed Route Vehicles	transit traveler request	Kauai Bus Fixed Route Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
SAE	View List	Advanced Traveler Information Systems (ATIS) General Use Standards Group	Group
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Kauai County Transportation Agency	Operate wifi capability on transit vehicles.

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PROJECT DETAILS: KAUAI DPW FIXED DYNAMIC MESSAGE SIGNS (DMS)

PROJECT OVERVIEW

Project Name:	Project Details: Kauai DPW Fixed Dynamic Message Signs (DMS)
Description:	This project will coordinate with HDOT-HWY-K to deploy permanent DMS with advisory speed messages. The signs will also have the capability to collect speed data.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-19
Stakeholders:	County of Kauai - Department of Public Works Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	ATMS06-1 - Traffic Information Dissemination - HDOT Highways Kauai District (HDOT-HWY-K) ATMS19-1 - Speed Warning and Enforcement - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Traffic Control Center Kauai DPW Kauai DPW Field Devices

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Roadway Speed Monitoring and Warning](#)

- The field element shall include sensors to detect vehicle speeds, under traffic or maintenance center control.
- If the speed detected by vehicle speed sensors is determined to be excessive, the field element shall provide a safe speed advisory to passing drivers via a driver information system (such as portable messages signs, field to vehicle communications to in-vehicle signing systems, etc.).

[TMC Speed Monitoring and Warning](#)

- The center shall collect fault data for the vehicle speed sensors for repair.
- The center shall remotely control vehicle speed sensors and control parameters may include environmental and traffic conditions.

[TMC Traffic Information Dissemination](#)

- The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
- The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Traffic Control Center	roadway information system data	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	speed monitoring control	Kauai DPW Field Devices
Kauai DPW Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	speed monitoring information	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	roadway information system status	Kauai DPW
Kauai DPW Field Devices	speed monitoring information	Kauai DPW

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Department of Public Works	Coordinate with HDOT-HWY-K to design and procure ITS field devices of Kauai County roads.
Hawaii Department of Transportation, Highways Division, Kauai District	Operate changeable speed limit signs, including collecting traffic count information from the devices.

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▶ PROJECT DETAILS: HDOT-AIR-K PARKING CLOSED CIRCUIT TELEVISION (CCTV)

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-AIR-K Parking Closed Circuit Television (CCTV)
Description:	This project will expand CCTV camera coverage to include parking areas.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-6
Stakeholders:	Hawaii Department of Transportation, Airports Division, Kauai District
Service Packages:	EM05-2 - Transportation Infrastructure Protection - HDOT Airports, Kauai District (HDOT-AIR-K)
Project Inventory:	HDOT-AIR-K Infrastructure Monitoring Equipment HDOT-AIR-K Security Dispatch Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Center Secure Area Surveillance](#)

- The center shall remotely monitor video images and audio surveillance data collected in secure areas including facilities and transportation infrastructure. The data may be raw or pre-processed in the field.

[Field Secure Area Surveillance](#)

- The field element shall include video and/or audio surveillance of secure areas including facilities and transportation infrastructure.
- The field element shall be remotely controlled by a center.
- The field element shall provide equipment status and fault indication of surveillance equipment to a center.

INTERFACES

Source	Architecture Flows	Destination
HDOT-AIR-K Infrastructure Monitoring Equipment	secure area surveillance data	HDOT-AIR-K Security Dispatch Center
HDOT-AIR-K Security Dispatch Center	secure area surveillance control	HDOT-AIR-K Infrastructure Monitoring Equipment

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Airports Division, Kauai District	Monitor secure areas using surveillance equipment, including CCTV.

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PROJECT DETAILS: HDOT-AIR-K ROADS CLOSED CIRCUIT TELEVISION (CCTV)

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-AIR-K Roads Closed Circuit Television (CCTV)
Description:	This project will expand CCTV camera coverage to include the roads leading to/from the airport.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-7
Stakeholders:	Hawaii Department of Transportation, Airports Division, Kauai District
Service Packages:	EM05-2 - Transportation Infrastructure Protection - HDOT Airports, Kauai District (HDOT-AIR-K)
Project Inventory:	HDOT-AIR-K Infrastructure Monitoring Equipment HDOT-AIR-K Security Dispatch Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Center Secure Area Surveillance](#)

- The center shall remotely monitor video images and audio surveillance data collected in secure areas including facilities and transportation infrastructure. The data may be raw or pre-processed in the field.
- The center shall exchange surveillance data with other emergency centers.
- The center shall identify potential security threats based on collected security surveillance data.

[Field Secure Area Surveillance](#)

- The field element shall include video and/or audio surveillance of secure areas including facilities and transportation infrastructure.
- The field element shall be remotely controlled by a center.
- The field element shall provide equipment status and fault indication of surveillance equipment to a center.
- The field element shall provide raw video or audio data.

INTERFACES

Source	Architecture Flows	Destination
HDOT-AIR-K Infrastructure Monitoring Equipment	secure area surveillance data	HDOT-AIR-K Security Dispatch Center

HDOT-AIR-K Security Dispatch Center	secure area surveillance control	HDOT-AIR-K Infrastructure Monitoring Equipment
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ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Airports Division, Kauai District	Monitor secure areas using surveillance equipment, including CCTV.

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▶ PROJECT DETAILS: HDOT-HWY-K TRAFFIC SIGNAL UPGRADE

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HWY-K Traffic Signal Upgrade
Description:	This project will upgrade traffic signal systems to have remote monitoring capability. Existing modems in equipment could be lit up and FOC could be added. Alternatively, a Public-Private partnership with telecommunications providers could be established through an MOA.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-1
Stakeholders:	Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	ATMS03-1 - Traffic Signal Control - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Field Devices HDOT-HWY-K Traffic Control Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Roadway Signal Controls](#)

- The field element shall control traffic signals under center control.
- The field element shall report the current signal control information to the center.
- The field element shall return traffic signal controller operational status to the center.

[TMC Signal Control](#)

- The center shall remotely control traffic signal controllers.
- The center shall collect traffic signal controller operational status and compare against the control information sent by the center.
- The center shall collect traffic signal controller fault data from the field.
- The center shall manage (define, store and modify) control plans to coordinate signalized intersections, to be engaged at the direction of center personnel or according to a daily schedule.
- The center shall implement control plans to coordinate signalized intersections based on data from sensors.
- The center shall manage boundaries of the control sections used within the signal system.
- The center shall maintain traffic signal coordination including synchronizing clocks throughout the system.

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Field Devices	right-of-way request notification	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	signal control status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	traffic flow	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	signal fault data	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Traffic Control Center	traffic sensor control	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control commands	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	video surveillance control	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control device configuration	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control plans	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal system configuration	HDOT-HWY-K Field Devices

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1202	Object Definitions for Actuated Traffic Signal Controller (ASC) Units	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
AASHTO/ITE/NEMA	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1210	Field Management Stations (FMS) - Part 1: Object Definitions for Signal System Masters	Message/Data
AASHTO/ITE/NEMA	NTCIP 1211	Object Definitions for Signal Control and Prioritization (SCP)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1214	Object Definitions for Conflict Monitor Units (CMU)	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Highways Division, Kauai District	Operate traffic signal systems for State owned intersections.

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▶ PROJECT DETAILS: HDOT-HWY-K FIXED DYNAMIC MESSAGE SIGNS (DMS)

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HWY-K Fixed Dynamic Message Signs (DMS)
Description:	This project will add fixed DMS at key locations in Kauai. These signs will need to be smaller fixed mount signs that would notify the public of road closures and alternate routes.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-5
Stakeholders:	Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	ATMS06-1 - Traffic Information Dissemination - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Field Devices HDOT-HWY-K Traffic Control Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Roadway Traffic Information Dissemination](#)

- The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display (s) (e.g. vehicle restrictions, or lane open/close).

[TMC Traffic Information Dissemination](#)

- The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
- The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Traffic Control Center	roadway information system data	HDOT-HWY-K Field Devices

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Highways Division, Kauai District	Provide traffic information to travelers via HDOT DMS equipment.

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▶ PROJECT DETAILS: KAUAI BUS TRANSIT CENTER

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Bus Transit Center
Description:	This project will design and construct a transit center at the Lihue Civic Center.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-21
Stakeholders:	Kauai County Transportation Agency
Service Packages:	APTS05-1 - Transit Security - Kauai Bus APTS08-1 - Transit Traveler Information - Kauai Bus
Project Inventory:	Kauai Bus Fixed Route Dispatch Kauai Bus Hub Displays Kauai Bus Transfer Hub Security Equipment

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Center Secure Area Surveillance](#)

- The center shall remotely monitor video images and audio surveillance data collected in secure areas including facilities (e.g. transit yards) and transportation infrastructure (e.g. bridges, tunnels, interchanges, roadway infrastructure, and transit railways or guideways). The data may be raw or pre-processed in the field.
- The center shall remotely monitor video images and audio surveillance data collected on-board transit vehicles. The data may be raw or pre-processed in the field.

[Transit Center Information Services](#)

- The center shall provide travelers using public transportation with traffic and advisory information upon request. Such information may include transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, and special events.

[Transit Center Security](#)

- The center shall receive reports of emergencies on-board transit vehicles entered directly by the transit vehicle operator or from a traveler through interfaces such as panic buttons or alarm switches.

INTERFACES

Source	Architecture Flows	Destination
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Kauai Bus Fixed Route Dispatch	transit traveler information	Kauai Bus Hub Displays
Kauai Bus Fixed Route Dispatch	secure area surveillance control	Kauai Bus Transfer Hub Security Equipment
Kauai Bus Transfer Hub Security Equipment	secure area surveillance data	Kauai Bus Fixed Route Dispatch
Kauai Bus Transfer Hub Security Equipment	alarm notification	Kauai Bus Fixed Route Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
SAE	View List	Advanced Traveler Information Systems (ATIS) General Use Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Kauai County Transportation Agency	Provide Next Bus transit traveler information.
	Provide transit security on all Kauai Bus vehicles and at Kauai Bus Hubs using silent alarms and on-board video surveillance.

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[PROJECT DETAILS: KAUAI EMS COMPUTER AIDED DISPATCH \(CAD\) SYSTEM](#)

PROJECT OVERVIEW

Project Name:	Project Details: Kauai EMS Computer Aided Dispatch (CAD) System
Description:	This project will upgrade tablets in Kauai EMS vehicles to ensure CAD functionality.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-32
Stakeholders:	Medical Transportation
Service Packages:	ATMS08-3 - Traffic Incident Management System - Kauai Emergency Vehicles EM01-1 - Emergency Call-Taking and Dispatch - Kauai Fire and EMS
Project Inventory:	Kauai 911 Dispatch Center Kauai EMS Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Dispatch](#)

- The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.
- The center shall relay location and incident details to the responding vehicles.
- The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
- The center shall store and maintain the emergency service responses in an action log.
- The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

[Incident Command](#)

- The center shall assess the status of responding emergency vehicles as part of an incident command.

[On-board EV En Route Support](#)

- The emergency vehicle shall track its current location.
- The emergency vehicle shall send the vehicle's location and operational data to the center for emergency management and dispatch.
- The emergency vehicle shall receive incident details and a suggested route when dispatched to a scene.

- ➔ The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.
- ➔ The emergency vehicle shall send requests to traffic signal control equipment at the roadside to preempt the signal.
- ➔ The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.
- ➔ The emergency vehicle shall send patient status information to the care facility along with a request for further information.

On-board EV Incident Management Communication

- ➔ The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.
- ➔ The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.
- ➔ The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.

INTERFACES

Source	Architecture Flows	Destination
Kauai 911 Dispatch Center	emergency dispatch requests	Kauai EMS Vehicles
Kauai 911 Dispatch Center	decision support information	Kauai EMS Vehicles
Kauai EMS Vehicles	emergency dispatch response	Kauai 911 Dispatch Center
Kauai EMS Vehicles	emergency vehicle tracking data	Kauai 911 Dispatch Center

ITS STANDARDS

SDO	Document ID	Title	Type
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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Medical Transportation	Provide emergency medical response for traffic incidents countywide.
	Provide emergency medical response to emergencies in Kauai.

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▶ PROJECT DETAILS: HDOT-HAR-K EXPANDED CLOSED CIRCUIT TELEVISION (CCTV) COVERAGE

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HAR-K Expanded Closed Circuit Television (CCTV) Coverage
Description:	This project will expand CCTV coverage at the port to address blind corners.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-13
Stakeholders:	Hawaii Department of Transportation, Harbors Division, Kauai District
Service Packages:	EM05-1 - Transportation Infrastructure Protection - HDOT Harbors, Kauai District (HDOT-HAR-K)
Project Inventory:	HDOT-HAR-K Infrastructure Monitoring Equipment HDOT-HAR-K Security Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Center Secure Area Surveillance](#)

- ▶ The center shall exchange surveillance data with other emergency centers.
- ▶ The center shall identify potential security threats based on collected security surveillance data.
- ▶ The center shall remotely monitor video images and audio surveillance data collected in secure areas including facilities and transportation infrastructure. The data may be raw or pre-processed in the field.

[Field Secure Area Surveillance](#)

- ▶ The field element shall be remotely controlled by a center.
- ▶ The field element shall provide equipment status and fault indication of surveillance equipment to a center.
- ▶ The field element shall provide raw video or audio data.
- ▶ The field element shall include video and/or audio surveillance of secure areas including facilities and transportation infrastructure.

INTERFACES

Source	Architecture Flows	Destination
HDOT-HAR-K Infrastructure Monitoring Equipment	secure area surveillance data	HDOT-HAR-K Security Center

HDOT-HAR-K Security Center

secure area surveillance
control

HDOT-HAR-K Infrastructure Monitoring
Equipment

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Harbors Division, Kauai District	Perform video surveillance of secure areas within harbor facilities.

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▶ PROJECT DETAILS: HDOT-HAR-K MONOPOLE WIRELESS COMMUNICATIONS

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HAR-K Monopole Wireless Communications
Description:	This project is part of the statewide maritime wireless communications project to construct and install a monopole at each port, enabling wireless communication between the Harbors Division and its districts, with the State and County Civil Defense/Emergency Management centers. Specific to Kauai, the project will enable HDOT-HAR-K to communicate with the other districts and will allow the Kauai Civil Defense to be able to see images from the HAR-K surveillance cameras at the County of Kauai's Emergency Operations Center (EOC) to increase situational awareness. Camera control would not be provided to other agencies or departments.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-12
Stakeholders:	County of Kauai - Civil Defense Agency Hawaii Department of Transportation, Harbors Division, Kauai District
Service Packages:	EM05-1 - Transportation Infrastructure Protection - HDOT Harbors, Kauai District (HDOT-HAR-K)
Project Inventory:	HDOT-HAR-K Security Center Kauai EOC

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Center Secure Area Surveillance](#)

- ▶ The center shall exchange surveillance data with other emergency centers.

[Emergency Response Management](#)

- ▶ The center shall provide strategic emergency response capabilities provided by an Emergency Operations Center for large-scale incidents and disasters.

INTERFACES

Source	Architecture Flows	Destination
HDOT-AIR-K Security Dispatch Center	incident report	Kauai EOC

HDOT-AIR-K Security Dispatch Center	threat information coordination	Kauai EOC
HDOT-HAR-K Security Center	cctv images_ud	Kauai EOC
Kauai EOC	incident report	HDOT-HAR-K Security Center
Kauai EOC	threat information coordination	HDOT-HAR-K Security Center

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
IEEE	View List	Incident Management Standards Group	Group

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Civil Defense Agency	Operate the County EOC, including incident coordination with emergency management providers.
Hawaii Department of Transportation, Harbors Division, Kauai District	Coordinate incident and threat information with the Kauai EOC.

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PROJECT DETAILS: KAPAA TRANSPORTATION SOLUTIONS PROJECT

PROJECT OVERVIEW

Project Name:	Project Details: Kapaa Transportation Solutions Project
Description:	The Kapaa Transportation Solutions Project will look at transportation improvements to benefit Kapaa. There may be ITS applications considered for implementation as part of this project.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-16
Stakeholders:	County of Kauai - Department of Public Works Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	
Project Inventory:	

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

INTERFACES

Source	Architecture Flows	Destination
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ITS STANDARDS

SDO	Document ID	Title	Type
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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
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▶ PROJECT DETAILS: KAUAI BUS AUTOMATED VEHICLE LOCATION (AVL)/ COMPUTER AIDED DISPATCH (CAD)

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Bus Automated Vehicle Location (AVL)/ Computer Aided Dispatch (CAD)
Description:	This project will add automated vehicle location (AVL) to all buses and paratransit vehicles, along with computer aided dispatch (CAD) for fleet management.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-23
Stakeholders:	Kauai County Transportation Agency
Service Packages:	APTS01-1 - Transit Vehicle Tracking - Kauai Bus APTS02-1 - Transit Fixed-Route Operations - Kauai Bus
Project Inventory:	Kauai Bus Fixed Route Dispatch Kauai Bus Fixed Route Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[On-board Schedule Management](#)

- ◆ The transit vehicle shall receive a vehicle assignment including transit route information, transit service instructions, traffic information, road conditions, and other information for the operator.
- ◆ The transit vehicle shall use the route information and its current location to determine the deviation from the predetermined schedule.
- ◆ The transit vehicle shall calculate the estimated times of arrival (ETA) at transit stops.
- ◆ The transit vehicle shall determine scenarios to correct the schedule deviation.
- ◆ The transit vehicle shall provide the schedule deviations and instructions for schedule corrections to the transit vehicle operator if the deviation is small, or the transit vehicle is operating in an urban area.
- ◆ The transit vehicle shall send the schedule deviation and estimated arrival time information to the center.

[On-board Transit Trip Monitoring](#)

- ◆ The transit vehicle shall track the current location of the transit vehicle.
- ◆ The transit vehicle shall support the computation of the location of a transit vehicle using on-board sensors to augment the location determination function. This may include proximity to the transit stops or other known reference points as well as recording trip length.

- ➔ The transit vehicle shall record transit trip monitoring data including vehicle mileage and fuel usage.

Transit Center Fixed-Route Operations

- ➔ The center shall generate transit routes and schedules based on such factors as parameters input by the system operator, road network conditions, incident information, operational data on current routes and schedules, and digitized map data.
- ➔ The center shall provide the interface to the system operator to control the generation of new routes and schedules (transit services) including the ability to review and update the parameters used by the routes and schedules generation processes and to initiate these processes
- ➔ The center shall be able to generate special routes and schedules to support an incident, disaster, evacuation, or other emergency.
- ➔ The center shall dispatch fixed route or flexible route transit vehicles
- ➔ The center shall collect transit operational data for use in the generation of routes and schedules.
- ➔ The center shall exchange information with Maintenance and Construction Operations concerning work zones, roadway conditions, asset restrictions, work plans, etc.
- ➔ The center shall disseminate up-to-date schedules and route information to other centers for fixed and flexible route services.

Transit Center Vehicle Tracking

- ➔ The center shall monitor the locations of all transit vehicles within its network.
- ➔ The center shall determine adherence of transit vehicles to their assigned schedule.
- ➔ The center shall provide transit operational data to traveler information service providers.

INTERFACES

Source	Architecture Flows	Destination
Kauai Bus Fixed Route Dispatch	transit vehicle operator information	Kauai Bus Fixed Route Vehicles
Kauai Bus Fixed Route Dispatch	transit schedule information	Kauai Bus Fixed Route Vehicles
Kauai Bus Fixed Route Vehicles	transit vehicle location data	Kauai Bus Fixed Route Dispatch
Kauai Bus Fixed Route Vehicles	transit vehicle schedule performance	Kauai Bus Fixed Route Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Kauai County Transportation Agency	Provide fixed route transit and demand responsive bus service for the county.
	Provide operator instructions and receive schedule performance data from Kauai Bus vehicles while in service.
	Track and evaluate schedule performance for all Kauai Bus vehicles.

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▶ PROJECT DETAILS: KAUAI BUS NEXT BUS TRAVELER INFORMATION

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Bus Next Bus Traveler Information
Description:	This project will add Next Bus real-time traveler information to Kauai buses.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-22
Stakeholders:	Kauai County Transportation Agency
Service Packages:	APTS01-1 - Transit Vehicle Tracking - Kauai Bus APTS08-1 - Transit Traveler Information - Kauai Bus
Project Inventory:	Kauai Bus Fixed Route Dispatch Kauai Bus Fixed Route Vehicles Kauai Bus Hub Displays Kauai Transit Information System Private Traveler Information Services Private Travelers Personal Computing Devices

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[ISP Traveler Data Collection](#)

- The center shall collect, process, and store transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information.

[On-board Transit Information Services](#)

- The transit vehicle shall broadcast advisories about the imminent arrival of the transit vehicle at the next stop via an on-board automated announcement system.

[On-board Transit Trip Monitoring](#)

- The transit vehicle shall track the current location of the transit vehicle.
- The transit vehicle shall support the computation of the location of a transit vehicle using on-board sensors to augment the location determination function. This may include proximity to the transit stops or other known reference points as well as recording trip length.
- The transit vehicle shall record transit trip monitoring data including vehicle mileage and fuel usage.

[Remote Transit Information Services](#)

- ➔ The public interface for travelers shall collect and provide real-time travel-related information at transit stops, multi-modal transfer points, and other public transportation areas.
- ➔ The public interface for travelers shall collect and present to the transit traveler information on transit routes, schedules, and real-time schedule adherence.

Transit Center Information Services

- ➔ The center shall provide travelers using public transportation with traffic and advisory information upon request. Such information may include transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, and special events.

Transit Center Vehicle Tracking

- ➔ The center shall monitor the locations of all transit vehicles within its network.
- ➔ The center shall determine adherence of transit vehicles to their assigned schedule.
- ➔ The center shall provide transit operational data to traveler information service providers.

INTERFACES

Source	Architecture Flows	Destination
Kauai Bus Fixed Route Dispatch	transit traveler information	Kauai Bus Fixed Route Vehicles
Kauai Bus Fixed Route Dispatch	transit traveler information	Kauai Bus Hub Displays
Kauai Bus Fixed Route Dispatch	transit and fare schedules	Kauai Transit Information System
Kauai Bus Fixed Route Dispatch	transit schedule adherence information	Kauai Transit Information System
Kauai Bus Fixed Route Dispatch	personal transit information	Private Travelers Personal Computing Devices
Kauai Bus Fixed Route Vehicles	transit vehicle schedule performance	Kauai Bus Fixed Route Dispatch
Kauai Transit Information System	transit information request	Kauai Bus Fixed Route Dispatch
Private Travelers Personal Computing Devices	transit information user request	Kauai Bus Fixed Route Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
SAE	View List	Advanced Traveler Information Systems (ATIS) General Use Standards Group	Group
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Kauai County Transportation Agency	Provide Next Bus transit traveler information.
	Track and evaluate schedule performance for all Kauai Bus vehicles.

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▶ PROJECT DETAILS: KAUAI BUS ON-BOARD CLOSED CAPTIONED TELEVISION (CCTV) CAMERAS

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Bus On-Board Closed Captioned Television (CCTV) Cameras
Description:	This project will add on-board closed captioned television (CCTV) cameras to Kauai Buses to provide security.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-20
Stakeholders:	Kauai County Transportation Agency
Service Packages:	APTS05-1 - Transit Security - Kauai Bus
Project Inventory:	Kauai Bus Fixed Route Dispatch Kauai Bus Fixed Route Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[On-board Transit Security](#)

- ◆ The transit vehicle shall perform video and audio surveillance inside of transit vehicles and output raw video or audio data for either local monitoring (for processing or direct output to the transit vehicle operator), remote monitoring or for local storage (e.g., in an event recorder).

[Transit Center Security](#)

- ◆ The center shall receive reports of emergencies on-board transit vehicles entered directly by the transit vehicle operator or from a traveler through interfaces such as panic buttons or alarm switches.

INTERFACES

Source	Architecture Flows	Destination
Kauai Bus Fixed Route Dispatch	secure area surveillance control	Kauai Bus Fixed Route Vehicles
Kauai Bus Fixed Route Vehicles	secure area surveillance data	Kauai Bus Fixed Route Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Kauai County Transportation Agency	Provide transit security on all Kauai Bus vehicles and at Kauai Bus Hubs using silent alarms and on-board video surveillance.

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PROJECT DETAILS: KAUAI CDA AND KAUAI 911 DISPATCH CENTER COORDINATION

PROJECT OVERVIEW

Project Name:	Project Details: Kauai CDA and Kauai 911 Dispatch Center Coordination
Description:	This project will add a read-only CAD feed from the Kauai 911 Dispatch Center to the Kauai EOC.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-27
Stakeholders:	County of Kauai - Civil Defense Agency County of Kauai - Police Department
Service Packages:	EM07-1 - Early Warning System - Kauai EOC EM08-1 - Disaster Response and Recovery - Kauai Emergency Operations Center (1 of 3) EM09-1 - Evacuation and Reentry Management - Kauai Emergency Operations Center (1 of 2)
Project Inventory:	Kauai 911 Dispatch Center Kauai EOC

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Early Warning System](#)

- ◆ The center shall broadcast wide-area alerts and advisories to other emergency management centers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property.
- ◆ The center shall process status information from each of the centers that have been sent the wide-area alert.
- ◆ The center shall broadcast wide-area alerts and advisories to other emergency management centers for emergency situations such as severe weather events, civil emergencies, child abduction (AMBER alert system), military activities, and other situations that pose a threat to life and property.

[Emergency Evacuation Support](#)

- ◆ The center shall manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
- ◆ The center shall develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.
- ◆ The center shall manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
- ◆ The center shall develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.

[Emergency Response Management](#)

- The center shall manage coordinated inter-agency responses to and recovery from large-scale emergencies. Such agencies include traffic management, transit, maintenance and construction management, rail operations, and other emergency management agencies.
- The center shall provide the capability to implement response plans and track progress through the incident by exchanging incident information and response status with allied agencies.
- The center shall develop, coordinate with other agencies, and store emergency response plans.
- The center shall allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.

Incident Command

- The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
- The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.

INTERFACES

Source	Architecture Flows	Destination
Kauai 911 Dispatch Center	incident report	Kauai EOC
Kauai 911 Dispatch Center	incident response coordination	Kauai EOC
Kauai 911 Dispatch Center	emergency plan coordination	Kauai EOC
Kauai 911 Dispatch Center	evacuation coordination	Kauai EOC
Kauai 911 Dispatch Center	resource coordination	Kauai EOC
Kauai 911 Dispatch Center	transportation system status	Kauai EOC
Kauai 911 Dispatch Center	incident command information coordination	Kauai EOC
Kauai 911 Dispatch Center	threat information coordination	Kauai EOC
Kauai 911 Dispatch Center	alert notification coordination	Kauai EOC
Kauai EOC	incident report	Kauai 911 Dispatch Center
Kauai EOC	incident response coordination	Kauai 911 Dispatch Center
Kauai EOC	emergency plan coordination	Kauai 911 Dispatch Center
Kauai EOC	evacuation coordination	Kauai 911 Dispatch Center
Kauai EOC	resource coordination	Kauai 911 Dispatch Center
Kauai EOC	transportation system status	Kauai 911 Dispatch Center
Kauai EOC	incident command information coordination	Kauai 911 Dispatch Center
Kauai EOC	threat information coordination	Kauai 911 Dispatch Center
Kauai EOC	alert notification coordination	Kauai 911 Dispatch Center

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
IEEE	View List	Incident Management Standards Group	Group

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Civil Defense Agency	Participate in incident response, coordination and reporting.
County of Kauai - Police Department	Coordinate incident and threat information with the Kauai EOC.

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PROJECT DETAILS: KAUAI DPW CLOSED CIRCUIT TELEVISION (CCTV)

PROJECT OVERVIEW

Project Name:	Project Details: Kauai DPW Closed Circuit Television (CCTV)
Description:	This project will coordinate with HDOT-HWY-K to add CCTV cameras for traffic monitoring on Kauai County roads at select areas.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-17
Stakeholders:	County of Kauai - Department of Public Works Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	ATMS01-1 - Network Surveillance - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Traffic Control Center Kauai DPW Kauai DPW Field Devices

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Collect Traffic Surveillance](#)

- The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.

[Roadway Basic Surveillance](#)

- The field element shall collect, process, and send traffic images to the center for further analysis and distribution.
- The field element shall return sensor and CCTV system operational status to the controlling center.

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Traffic Control Center	video surveillance control	Kauai DPW Field Devices
Kauai DPW Field Devices	traffic images	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	traffic images	Kauai DPW

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Department of Public Works	Coordinate with HDOT-HWY-K to design and procure ITS field devices of Kauai County roads.
Hawaii Department of Transportation, Highways Division, Kauai District	Obtain traffic images and traffic flow data through CCTVs and field sensors and maintain operational control of its own field equipment.

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▶ PROJECT DETAILS: HDOT-HWY-K PORTABLE DYNAMIC MESSAGE SIGN (DMS) UPGRADE

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-HWY-K Portable Dynamic Message Sign (DMS) Upgrade
Description:	This project will upgrade HDOT-HWY-K portable DMS to have modems for remote access.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-2
Stakeholders:	Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	ATMS06-1 - Traffic Information Dissemination - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Field Devices HDOT-HWY-K Traffic Control Center

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Roadway Traffic Information Dissemination](#)

- The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display (s) (e.g. vehicle restrictions, or lane open/close).

[TMC Traffic Information Dissemination](#)

- The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
- The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Traffic Control Center	roadway information system data	HDOT-HWY-K Field Devices

ITS STANDARDS

SDO	Document ID	Title	Type

AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Highways Division, Kauai District	Provide traffic information to travelers via HDOT DMS equipment.

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PROJECT DETAILS: KAUAI DPW TEMPORARY SPEED SIGNS

PROJECT OVERVIEW

Project Name:	Project Details: Kauai DPW Temporary Speed Signs
Description:	This project coordinates with HDOT-HWY-K to deploy temporary speed signs with the dual purpose of collecting data and responding to neighborhood speed complaints.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-18
Stakeholders:	County of Kauai - Department of Public Works Hawaii Department of Transportation, Highways Division, Kauai District
Service Packages:	ATMS19-1 - Speed Warning and Enforcement - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Traffic Control Center Kauai DPW Kauai DPW Field Devices

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Roadway Speed Monitoring and Warning](#)

- The field element shall include sensors to detect vehicle speeds, under traffic or maintenance center control.
- If the speed detected by vehicle speed sensors is determined to be excessive, the field element shall provide a safe speed advisory to passing drivers via a driver information system (such as portable messages signs, field to vehicle communications to in-vehicle signing systems, etc.).

[TMC Speed Monitoring and Warning](#)

- The center shall collect fault data for the vehicle speed sensors for repair.
- The center shall remotely control vehicle speed sensors and control parameters may include environmental and traffic conditions.

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Traffic Control Center	speed monitoring control	Kauai DPW Field Devices

Kauai DPW Field Devices	speed monitoring information	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	speed monitoring information	Kauai DPW

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Department of Public Works	Coordinate with HDOT-HWY-K to design and procure ITS field devices of Kauai County roads.
Hawaii Department of Transportation, Highways Division, Kauai District	Operate changeable speed limit signs, including collecting traffic count information from the devices.

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[PROJECT DETAILS: KAUAI FIRE MDT UPGRADE](#)

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Fire MDT Upgrade
Description:	This project will replace MDTs (likely with tablets). [Note: This project has some dependency on KFD's selection of a replacement CAD system.]
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-28
Stakeholders:	County of Kauai - Fire Department
Service Packages:	ATMS08-3 - Traffic Incident Management System - Kauai Emergency Vehicles EM01-2 - Emergency Call-Taking and Dispatch - Kauai Police Department
Project Inventory:	Kauai 911 Dispatch Center Kauai Fire Departmental Operations Center Kauai Fire Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Dispatch](#)

- The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.
- The center shall relay location and incident details to the responding vehicles.
- The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
- The center shall store and maintain the emergency service responses in an action log.

[Incident Command](#)

- The center shall assess the status of responding emergency vehicles as part of an incident command.
- The center shall assess the status of responding emergency vehicles as part of an incident command.

[On-board EV Incident Management Communication](#)

- The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.
- The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.
- The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.
- The emergency vehicle shall provide traffic incident information to approaching vehicles using short range communications.

INTERFACES

Source	Architecture Flows	Destination
Kauai 911 Dispatch Center	emergency dispatch requests	Kauai Fire Vehicles
Kauai 911 Dispatch Center	suggested route	Kauai Fire Vehicles
Kauai 911 Dispatch Center	decision support information	Kauai Fire Vehicles
Kauai Fire Departmental Operations Center	decision support information	Kauai Fire Vehicles
Kauai Fire Vehicles	emergency dispatch response	Kauai 911 Dispatch Center
Kauai Fire Vehicles	emergency vehicle tracking data	Kauai 911 Dispatch Center
Kauai Fire Vehicles	incident status	Kauai 911 Dispatch Center
Kauai Fire Vehicles	incident status	Kauai Fire Departmental Operations Center

ITS STANDARDS

SDO	Document ID	Title	Type
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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Fire Department	Provide response to traffic incidents in Kauai, including HAZMAT incident response.

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PROJECT DETAILS: KAUAI FIRE WIRELESS COMMUNICATIONS UPGRADE

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Fire Wireless Communications Upgrade
Description:	This project will improve wireless communications for the Kauai Fire.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-29
Stakeholders:	County of Kauai - Police Department County of Kauai - Fire Department
Service Packages:	ATMS08-3 - Traffic Incident Management System - Kauai Emergency Vehicles EM01-1 - Emergency Call-Taking and Dispatch - Kauai Fire and EMS
Project Inventory:	Kauai 911 Dispatch Center Kauai Fire Departmental Operations Center Kauai Fire Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Dispatch](#)

- ✦ The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- ✦ The center shall relay location and incident details to the responding vehicles.
- ✦ The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.

[Incident Command](#)

- ✦ The center shall provide tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders to support local management of an incident.
- ✦ The center shall assess the status of responding emergency vehicles as part of an incident command.

[On-board EV En Route Support](#)

- ✦ The emergency vehicle shall send the vehicle's location and operational data to the center for emergency management and dispatch.
- ✦ The emergency vehicle shall receive incident details and a suggested route when dispatched to a scene.

[On-board EV Incident Management Communication](#)

- The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.
- The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.

INTERFACES

Source	Architecture Flows	Destination
Kauai 911 Dispatch Center	emergency dispatch requests	Kauai Fire Vehicles
Kauai 911 Dispatch Center	suggested route	Kauai Fire Vehicles
Kauai 911 Dispatch Center	decision support information	Kauai Fire Vehicles
Kauai Fire Departmental Operations Center	decision support information	Kauai Fire Vehicles
Kauai Fire Vehicles	emergency dispatch response	Kauai 911 Dispatch Center
Kauai Fire Vehicles	emergency vehicle tracking data	Kauai 911 Dispatch Center
Kauai Fire Vehicles	incident status	Kauai 911 Dispatch Center
Kauai Fire Vehicles	incident status	Kauai Fire Departmental Operations Center
Kauai Fire Vehicles	incident status_ud	Other Kauai Fire Vehicles
Other Kauai Fire Vehicles	incident status_ud	Kauai Fire Vehicles

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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Fire Department	

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▶ PROJECT DETAILS: KAUAI POLICE COMPUTER AIDED DISPATCH (CAD) SYSTEM UPGRADE

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Police Computer Aided Dispatch (CAD) System Upgrade
Description:	This project will upgrade or replace the Kauai Police CAD system.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-30
Stakeholders:	County of Kauai - Police Department
Service Packages:	ATMS08-4 - Traffic Incident Management System - Kauai Emergency Vehicles EM01-2 - Emergency Call-Taking and Dispatch - Kauai Police Department
Project Inventory:	Kauai 911 Dispatch Center Kauai Police Departmental Operations Center Kauai Police Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Dispatch](#)

- The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.
- The center shall relay location and incident details to the responding vehicles.
- The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
- The center shall store and maintain the emergency service responses in an action log.

[Emergency Response Management](#)

- The center shall provide strategic emergency response capabilities provided by an Emergency Operations Center for large-scale incidents and disasters.
- The center shall provide the capability to implement response plans and track progress through the incident by exchanging incident information and response status with allied agencies.
- The center shall track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.
- The center shall allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.

[Incident Command](#)

- ➔ The center shall provide tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders to support local management of an incident.
- ➔ The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
- ➔ The center shall track and maintain resource information and action plans pertaining to the incident command.
- ➔ The center shall assess the status of responding emergency vehicles as part of an incident command.

On-board EV En Route Support

- ➔ The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.
- ➔ The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.
- ➔ The emergency vehicle shall track its current location.
- ➔ The emergency vehicle shall send the vehicle's location and operational data to the center for emergency management and dispatch.
- ➔ The emergency vehicle shall receive incident details and a suggested route when dispatched to a scene.

On-board EV Incident Management Communication

- ➔ The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.
- ➔ The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.
- ➔ The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.

INTERFACES

Source	Architecture Flows	Destination
Kauai 911 Dispatch Center	emergency dispatch requests	Kauai Police Vehicles
Kauai 911 Dispatch Center	decision support information	Kauai Police Vehicles
Kauai Police Departmental Operations Center	emergency dispatch requests	Kauai Police Vehicles
Kauai Police Departmental Operations Center	decision support information	Kauai Police Vehicles
Kauai Police Vehicles	emergency dispatch response	Kauai 911 Dispatch Center
Kauai Police Vehicles	emergency vehicle tracking data	Kauai 911 Dispatch Center
Kauai Police Vehicles	incident status	Kauai 911 Dispatch Center
Kauai Police Vehicles	emergency dispatch response	Kauai Police Departmental Operations Center
Kauai Police Vehicles	emergency vehicle tracking data	Kauai Police Departmental Operations Center
Kauai Police Vehicles	incident status	Kauai Police Departmental Operations Center

ITS STANDARDS

SDO	Document ID	Title	Type
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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Police Department	Provide countywide response to traffic incidents.
	Provide response vehicles and personnel to emergencies in Kauai.
	Receive emergency calls and dispatch vehicles for Kauai Police, Kauai Fire, and Kauai EMS.

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▶ PROJECT DETAILS: KAUAI POLICE MOBILE DATA TERMINAL (MDT) UPGRADE

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Police Mobile Data Terminal (MDT) Upgrade
Description:	This project will upgrade the MDTs in Kauai Police vehicles.
Status:	Planned
Timeframe:	Near-Term
Geographic Scope:	Kauai
Project ID:	K-31
Stakeholders:	County of Kauai - Police Department
Service Packages:	ATMS08-4 - Traffic Incident Management System - Kauai Emergency Vehicles EM01-2 - Emergency Call-Taking and Dispatch - Kauai Police Department
Project Inventory:	Kauai 911 Dispatch Center Kauai Police Departmental Operations Center Kauai Police Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Dispatch](#)

- The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.
- The center shall relay location and incident details to the responding vehicles.
- The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
- The center shall store and maintain the emergency service responses in an action log.
- The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.

[Emergency Response Management](#)

- The center shall provide strategic emergency response capabilities provided by an Emergency Operations Center for large-scale incidents and disasters.
- The center shall provide the capability to implement response plans and track progress through the incident by exchanging incident information and response status with allied agencies.
- The center shall track the availability of resources and coordinate resource sharing with allied agency centers including traffic, maintenance, or other emergency centers.

- ➔ The center shall allocate the appropriate emergency services, resources, and vehicle (s) to respond to incidents, and shall provide the capability to override the current allocation to suit the special needs of a current incident.

Incident Command

- ➔ The center shall provide tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders to support local management of an incident.
- ➔ The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.
- ➔ The center shall track and maintain resource information and action plans pertaining to the incident command.
- ➔ The center shall assess the status of responding emergency vehicles as part of an incident command.

On-board EV En Route Support

- ➔ The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.
- ➔ The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.
- ➔ The emergency vehicle shall track its current location.
- ➔ The emergency vehicle shall send the vehicle's location and operational data to the center for emergency management and dispatch.
- ➔ The emergency vehicle shall receive incident details and a suggested route when dispatched to a scene.

On-board EV Incident Management Communication

- ➔ The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.
- ➔ The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.
- ➔ The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.

INTERFACES

Source	Architecture Flows	Destination
Kauai 911 Dispatch Center	emergency dispatch requests	Kauai Police Vehicles
Kauai 911 Dispatch Center	decision support information	Kauai Police Vehicles
Kauai Police Departmental Operations Center	emergency dispatch requests	Kauai Police Vehicles
Kauai Police Departmental Operations Center	decision support information	Kauai Police Vehicles
Kauai Police Vehicles	emergency dispatch response	Kauai 911 Dispatch Center
Kauai Police Vehicles	emergency vehicle tracking data	Kauai 911 Dispatch Center
Kauai Police Vehicles	incident status	Kauai 911 Dispatch Center
Kauai Police Vehicles	emergency dispatch response	Kauai Police Departmental Operations Center
Kauai Police Vehicles	emergency vehicle tracking data	Kauai Police Departmental Operations Center
Kauai Police Vehicles	incident status	Kauai Police Departmental Operations Center

ITS STANDARDS

SDO	Document ID	Title	Type
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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
County of Kauai - Police Department	Provide countywide response to traffic incidents.
	Provide response vehicles and personnel to emergencies in Kauai.

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▶ PROJECT DETAILS: KAUAI BUS MASTER TRANSIT COORDINATION CENTER

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Bus Master Transit Coordination Center
Description:	This project would create a master transit coordination center for the island. This center could potentially include not only Kauai Bus elements, but also private shuttles if the shuttle project moves in that direction.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-26
Stakeholders:	Kauai County Transportation Agency
Service Packages:	APTS02-1 - Transit Fixed-Route Operations - Kauai Bus APTS02-2 - Transit Fixed-Route Operations - Kauai Bus
Project Inventory:	Kauai Bus Fixed Route Dispatch Kauai Bus Fixed Route Vehicles Shuttle

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[On-board Schedule Management](#)

- ◆ The transit vehicle shall receive a vehicle assignment including transit route information, transit service instructions, traffic information, road conditions, and other information for the operator.
- ◆ The transit vehicle shall use the route information and its current location to determine the deviation from the predetermined schedule.
- ◆ The transit vehicle shall calculate the estimated times of arrival (ETA) at transit stops.
- ◆ The transit vehicle shall determine scenarios to correct the schedule deviation.
- ◆ The transit vehicle shall provide the schedule deviations and instructions for schedule corrections to the transit vehicle operator if the deviation is small, or the transit vehicle is operating in an urban area.
- ◆ The transit vehicle shall send the schedule deviation and estimated arrival time information to the center.
- ◆ The transit vehicle shall receive a vehicle assignment including transit route information, transit service instructions, traffic information, road conditions, and other information for the operator.
- ◆ The transit vehicle shall use the route information and its current location to determine the deviation from the predetermined schedule.
- ◆ The transit vehicle shall calculate the estimated times of arrival (ETA) at transit stops.

[Transit Center Fixed-Route Operations](#)

- The center shall generate transit routes and schedules based on such factors as parameters input by the system operator, road network conditions, incident information, operational data on current routes and schedules, and digitized map data.
- The center shall provide the interface to the system operator to control the generation of new routes and schedules (transit services) including the ability to review and update the parameters used by the routes and schedules generation processes and to initiate these processes
- The center shall be able to generate special routes and schedules to support an incident, disaster, evacuation, or other emergency.
- The center shall dispatch fixed route or flexible route transit vehicles
- The center shall collect transit operational data for use in the generation of routes and schedules.
- The center shall exchange information with Maintenance and Construction Operations concerning work zones, roadway conditions, asset restrictions, work plans, etc.
- The center shall disseminate up-to-date schedules and route information to other centers for fixed and flexible route services.

INTERFACES

Source	Architecture Flows	Destination
Kauai Bus Fixed Route Dispatch	transit vehicle operator information	Kauai Bus Fixed Route Vehicles
Kauai Bus Fixed Route Dispatch	transit schedule information	Kauai Bus Fixed Route Vehicles
Kauai Bus Fixed Route Dispatch	transit vehicle operator information	Shuttle
Kauai Bus Fixed Route Dispatch	transit schedule information	Shuttle
Kauai Bus Fixed Route Vehicles	transit vehicle schedule performance	Kauai Bus Fixed Route Dispatch
Shuttle	transit vehicle schedule performance	Kauai Bus Fixed Route Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Kauai County Transportation Agency	Operate transit coordination center for County.
	Provide fixed route transit and demand responsive bus service for the county.
	Provide operator instructions and receive schedule performance data from Kauai Bus vehicles while in service.
	Track and evaluate schedule performance for all Kauai Bus vehicles.

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PROJECT DETAILS: KAUAI BUS TRANSIT SIGNAL PRIORITY (TSP)

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Bus Transit Signal Priority (TSP)
Description:	This project will implement transit signal priority to improve schedule adherence.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-25
Stakeholders:	Hawaii Department of Transportation, Highways Division, Kauai District Kauai County Transportation Agency
Service Packages:	
Project Inventory:	HDOT-HWY-K Field Devices HDOT-HWY-K Traffic Control Center Kauai Bus Fixed Route Dispatch Kauai Bus Fixed Route Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[On-board Transit Signal Priority](#)

- The transit vehicle shall determine the schedule deviation and estimated times of arrival (ETA) at transit stops.
- The transit vehicle shall send priority requests to traffic signal controllers at intersections, pedestrian crossings, and multimodal crossings on the roads (surface streets) and freeway (ramp controls) network that enable a transit vehicle schedule deviation to be corrected.
- The transit vehicle shall send the schedule deviation data and status of priority requests to the transit vehicle operator and provide the capability for the transit vehicle operator to control the priority system.
- The transit vehicle shall prevent a priority request from being sent when the transit vehicle cannot use the priority (e.g., when the transit vehicle makes a passenger stop on the approach to an intersection).

[Roadway Signal Priority](#)

- The field element shall respond to signal priority requests from transit vehicles.

[TMC Multimodal Coordination](#)

- The center shall respond to requests from transit management centers for signal priority at one or more intersections along a particular transit route.
- The center shall exchange information with transit management centers including details current transit routes, the level of service on each route, and the progress of individual vehicles along their routes.

TMC Signal Control

- The center shall remotely control traffic signal controllers.

Transit Center Signal Priority

- The center shall analyze transit vehicle schedule performance to determine the need for priority along certain routes or at certain intersections.
- The center shall send requests for priority along routes or at intersections to traffic management.
- The center shall define business rules that govern use of transit vehicle signal priority, communicate these rules to the transit vehicle, and monitor transit vehicle requests for priority at signalized intersections.
- The center shall provide transit operations personnel with the capability to control and monitor transit signal priority operations.

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Field Devices	right-of-way request notification	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	signal control status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	signal fault data	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Traffic Control Center	signal control commands	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	request transit information	Kauai Bus Fixed Route Dispatch
Kauai Bus Fixed Route Dispatch	traffic control priority request	HDOT-HWY-K Traffic Control Center
Kauai Bus Fixed Route Dispatch	transit system data	HDOT-HWY-K Traffic Control Center
Kauai Bus Fixed Route Vehicles	local signal priority request	HDOT-HWY-K Field Devices
Kauai Bus Fixed Route Vehicles	transit vehicle schedule performance	Kauai Bus Fixed Route Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
ASTM	View List	Dedicated Short Range Communication at 915 MHz Standards Group	Group
ASTM/IEEE/SAE	View List	Dedicated Short Range Communication at 5.9 GHz Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1202	Object Definitions for Actuated Traffic Signal Controller (ASC) Units	Message/Data
AASHTO/ITE/NEMA	NTCIP 1210	Field Management Stations (FMS) - Part 1: Object Definitions for Signal System Masters	Message/Data
AASHTO/ITE/NEMA	NTCIP 1211	Object Definitions for Signal Control and Prioritization (SCP)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1214	Object Definitions for Conflict Monitor Units (CMU)	Message/Data
APTA	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Highways Division, Kauai District	Provide signal priority when requested for Kauai County Transit vehicles
Kauai County Transportation Agency	Coordinate with HDOT-HWY-K for traffic signal priority.
	Track and evaluate schedule performance for all Kauai Bus vehicles.

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PROJECT DETAILS: HANAIEI FLOOD WARNING SYSTEM

PROJECT OVERVIEW

Project Name:	Project Details: Hanalei Flood Warning System
Description:	This project will involve HDOT-HWY-K, Kauai Civil Defense, Police, and DPW to develop a warning system consisting of CCTV and other ITS equipment. Information from rain gauges operated and maintained by the National Weather Service / USGS will be used for alerting agency personnel. The Kauai EOC activate alerts about imminent floods through its Blackboard notification system, including updates concerning road closures due to flooding. Finally, the Kauai EOC will also warn shelter providers, as travelers can often be stranded during floods.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-34
Stakeholders:	County of Kauai - Civil Defense Agency County of Kauai - Department of Public Works Hawaii Department of Transportation, Highways Division, Kauai District County of Kauai - Police Department Kauai Visitors Bureau
Service Packages:	ATMS06-1 - Traffic Information Dissemination - HDOT Highways Kauai District (HDOT-HWY-K) EM07-1 - Early Warning System - Kauai EOC EM09-2 - Evacuation and Reentry Management - Kauai Emergency Operations Center (2 of 2) EM10-2 - Disaster Traveler Information - Kauai Mass Public Notification System (2 of 2)
Project Inventory:	HDOT-HWY-K Field Devices HDOT-HWY-K Traffic Control Center Kauai 911 Dispatch Center Kauai DPW Field Devices Kauai EOC Kauai Visitors Bureau National Weather Service Private Travelers Personal Computing Devices Red Cross

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Evacuation Support](#)

- The center shall manage inter-agency coordination of evacuation operations, from initial planning through the evacuation process and reentry.
- The center shall develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.

- The center shall provide traveler information systems with evacuation guidance including basic information to assist potential evacuees in determining whether evacuation is necessary and when it is safe to return.

Emergency Response Management

- The center shall manage coordinated inter-agency responses to and recovery from large-scale emergencies. Such agencies include traffic management, transit, maintenance and construction management, rail operations, and other emergency management agencies.

Roadway Traffic Information Dissemination

- The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display (s) (e.g. vehicle restrictions, or lane open/close).
- The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display (s) (e.g. vehicle restrictions, or lane open/close).
- The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.

TMC Traffic Information Dissemination

- The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
- The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Traffic Control Center	roadway information system data	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	roadway information system data	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	incident information	Kauai EOC
Kauai 911 Dispatch Center	incident report	Kauai EOC
Kauai 911 Dispatch Center	threat information coordination	Kauai EOC
Kauai DPW Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center
Kauai EOC	incident information	HDOT-HWY-K Traffic Control Center
Kauai EOC	threat information	HDOT-HWY-K Traffic Control Center
Kauai EOC	incident report	Kauai 911 Dispatch Center
Kauai EOC	threat information coordination	Kauai 911 Dispatch Center
Kauai EOC	emergency traveler information	Private Travelers Personal Computing Devices
Kauai EOC	evacuation information	Red Cross
National Weather Service	alerts and advisories	Kauai EOC
Private Travelers Personal Computing Devices	emergency traveler information request	Kauai EOC
Red Cross	shelter information	Kauai EOC

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
ASTM/IEEE/SAE	View List	Dedicated Short Range Communication at 5.9 GHz Standards Group	Group
IEEE	View List	Incident Management Standards Group	Group
SAE	View List	Advanced Traveler Information Systems (ATIS) General Use Standards Group	Group
AASHTO/ITE	ITE TMDD	Traffic Management Data Dictionary (TMDD) and Message Sets for External Traffic Management Center Communications (MS/ETMCC)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
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County of Kauai - Civil Defense Agency	Monitor rain level and flood level gauge information.
	Operate the County EOC, including incident coordination with emergency management providers.
	Provide evacuation and incident information to travelers in the region using Blackboard Connect CTY, the Kauai County Website, and through private traveler information providers.
County of Kauai - Department of Public Works	Coordinate with HDOT-HWY-K to design and procure ITS field devices of Kauai County roads.
Hawaii Department of Transportation, Highways Division, Kauai District	Provide incident information to travelers via traffic information devices on state roads.
County of Kauai - Police Department	Coordinate incident and threat information with the Kauai EOC.

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[PROJECT DETAILS: KAUAI WIRELESS COMMUNICATIONS UPGRADE](#)

PROJECT OVERVIEW

Project Name:	Project Details: Kauai Wireless Communications Upgrade
Description:	This project will improve wireless communications for Kauai EMS.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-33
Stakeholders:	County of Kauai - Police Department Medical Transportation
Service Packages:	ATMS08-3 - Traffic Incident Management System - Kauai Emergency Vehicles EM01-1 - Emergency Call-Taking and Dispatch - Kauai Fire and EMS
Project Inventory:	Kauai 911 Dispatch Center Kauai EMS Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Call-Taking](#)

- The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.

[Emergency Dispatch](#)

- The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.
- The center shall relay location and incident details to the responding vehicles.
- The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.

[On-board EV En Route Support](#)

- The emergency vehicle shall track its current location.
- The emergency vehicle shall send the vehicle's location and operational data to the center for emergency management and dispatch.
- The emergency vehicle shall receive incident details and a suggested route when dispatched to a scene.
- The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.

- The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.

On-board EV Incident Management Communication

- The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.
- The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.
- The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.

INTERFACES

Source	Architecture Flows	Destination
Kauai 911 Dispatch Center	emergency dispatch requests	Kauai EMS Vehicles
Kauai 911 Dispatch Center	decision support information	Kauai EMS Vehicles
Kauai EMS Vehicles	emergency dispatch response	Kauai 911 Dispatch Center
Kauai EMS Vehicles	emergency vehicle tracking data	Kauai 911 Dispatch Center
Kauai EMS Vehicles	incident status	Kauai 911 Dispatch Center

ITS STANDARDS

SDO	Document ID	Title	Type
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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
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PROJECT DETAILS: HDOT-AIR-K AIRPORT SECONDARY ENTRANCE

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-AIR-K Airport Secondary Entrance
Description:	Should a second entrance to the Lihue Airport be constructed, ITS field devices (e.g., CCTV cameras, traffic sensors, dynamic message signs) could be included in the project design in coordination with HDOT-HWY-K.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-11
Stakeholders:	Hawaii Department of Transportation, Highways Division, Kauai District Hawaii Department of Transportation, Airports Division, Kauai District
Service Packages:	ATMS01-1 - Network Surveillance - HDOT Highways Kauai District (HDOT-HWY-K) ATMS03-1 - Traffic Signal Control - HDOT Highways Kauai District (HDOT-HWY-K) ATMS06-1 - Traffic Information Dissemination - HDOT Highways Kauai District (HDOT-HWY-K)
Project Inventory:	HDOT-HWY-K Field Devices HDOT-HWY-K Traffic Control Center Kauai DPW Field Devices

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Collect Traffic Surveillance](#)

- The center shall monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.
- The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.

[Roadway Basic Surveillance](#)

- The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.
- The field element shall collect, process, and send traffic images to the center for further analysis and distribution.
- The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.
- The field element shall collect, process, and send traffic images to the center for further analysis and distribution.
- The field element shall return sensor and CCTV system operational status to the controlling center.

[Roadway Signal Controls](#)

- The field element shall control traffic signals under center control.
- The field element shall return traffic signal controller operational status to the center.
- The field element shall control traffic signals under center control.
- The field element shall report the current signal control information to the center.
- The field element shall report current preemption status to the center.
- The field element shall return traffic signal controller operational status to the center.
- The field element shall return traffic signal controller fault data to the center.
- The field element shall report current transit priority status to the center.

Roadway Traffic Information Dissemination

- The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display (s) (e.g. vehicle restrictions, or lane open/close).
- The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display (s) (e.g. vehicle restrictions, or lane open/close).
- The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.

TMC Signal Control

- The center shall remotely control traffic signal controllers.
- The center shall collect traffic signal controller operational status and compare against the control information sent by the center.
- The center shall collect traffic signal controller fault data from the field.
- The center shall manage (define, store and modify) control plans to coordinate signalized intersections, to be engaged at the direction of center personnel or according to a daily schedule.
- The center shall implement control plans to coordinate signalized intersections based on data from sensors.
- The center shall manage boundaries of the control sections used within the signal system.
- The center shall maintain traffic signal coordination including synchronizing clocks throughout the system.

TMC Traffic Information Dissemination

- The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
- The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).

INTERFACES

Source	Architecture Flows	Destination
HDOT-HWY-K Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	signal control status	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	traffic flow	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	traffic images	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Field Devices	signal fault data	HDOT-HWY-K Traffic Control Center
HDOT-HWY-K Traffic Control Center	roadway information system data	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	traffic sensor control	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control commands	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	video surveillance control	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control device configuration	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal control plans	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	signal system configuration	HDOT-HWY-K Field Devices
HDOT-HWY-K Traffic Control Center	roadway information system data	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	traffic sensor control	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	signal control commands	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	video surveillance control	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	signal control device configuration	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	signal control plans	Kauai DPW Field Devices
HDOT-HWY-K Traffic Control Center	signal system configuration	Kauai DPW Field Devices
Kauai DPW Field Devices	right-of-way request notification	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	roadway information system status	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	signal control status	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	traffic flow	HDOT-HWY-K Traffic Control Center

Kauai DPW Field Devices	traffic images	HDOT-HWY-K Traffic Control Center
Kauai DPW Field Devices	signal fault data	HDOT-HWY-K Traffic Control Center

ITS STANDARDS

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Field Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1202	Object Definitions for Actuated Traffic Signal Controller (ASC) Units	Message/Data
AASHTO/ITE/NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
AASHTO/ITE/NEMA	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1210	Field Management Stations (FMS) - Part 1: Object Definitions for Signal System Masters	Message/Data
AASHTO/ITE/NEMA	NTCIP 1211	Object Definitions for Signal Control and Prioritization (SCP)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1214	Object Definitions for Conflict Monitor Units (CMU)	Message/Data

OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Highways Division, Kauai District	Coordinate traffic information and traffic control with Kauai County Department of Public Works.
	Obtain traffic images and traffic flow data through CCTVs and field sensors and maintain operational control of its own field equipment.
	Operate traffic signal systems for State owned intersections.
	Provide traffic information to travelers via HDOT DMS equipment.
Hawaii Department of Transportation, Airports Division, Kauai District	Coordinate with HDOT-HWY-K for design and implementation of ITS on roads approaching the Lihue airport.

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PROJECT DETAILS: HDOT-AIR-K MOBILE DATA TERMINALS

PROJECT OVERVIEW

Project Name:	Project Details: HDOT-AIR-K Mobile Data Terminals
Description:	This project will add MDTs to the HDOT-AIR-K/ARFF Fire/Emergency Vehicles.
Status:	Planned
Timeframe:	Long-Term
Geographic Scope:	Kauai
Project ID:	K-9
Stakeholders:	Hawaii Department of Transportation, Airports Division, Kauai District
Service Packages:	EM01-3 - Emergency Call-Taking and Dispatch - HDOT-AIR-K/ARFF
Project Inventory:	HDOT-AIR-K Security Dispatch Center HDOT-AIR-K/ARFF Dispatch HDOT-AIR-K/ARFF Fire/Rescue Vehicles

FUNCTIONAL REQUIREMENTS

Click on a Project Inventory element from the list above to view functional requirements.

[Emergency Dispatch](#)

- ✦ The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.
- ✦ The center shall store the current status of all emergency vehicles available for dispatch and those that have been dispatched.
- ✦ The center shall relay location and incident details to the responding vehicles.
- ✦ The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.
- ✦ The center shall store and maintain the emergency service responses in an action log.

[On-board EV En Route Support](#)

- ✦ The emergency vehicle, including roadway service patrols, shall track its current location.
- ✦ The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.

[On-board EV Incident Management Communication](#)

- ✦ The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.

- ➔ The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.
- ➔ The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.

INTERFACES

Source	Architecture Flows	Destination
HDOT-AIR-K Security Dispatch Center	emergency dispatch requests	HDOT-AIR-K/ARFF Fire/Rescue Vehicles
HDOT-AIR-K/ARFF Dispatch	emergency dispatch requests	HDOT-AIR-K/ARFF Fire/Rescue Vehicles
HDOT-AIR-K/ARFF Fire/Rescue Vehicles	emergency dispatch response	HDOT-AIR-K Security Dispatch Center
HDOT-AIR-K/ARFF Fire/Rescue Vehicles	emergency vehicle tracking data	HDOT-AIR-K Security Dispatch Center
HDOT-AIR-K/ARFF Fire/Rescue Vehicles	emergency dispatch response	HDOT-AIR-K/ARFF Dispatch
HDOT-AIR-K/ARFF Fire/Rescue Vehicles	emergency vehicle tracking data	HDOT-AIR-K/ARFF Dispatch

ITS STANDARDS

SDO	Document ID	Title	Type
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OPERATIONAL CONCEPTS

Stakeholder	Roles and Responsibilities
Hawaii Department of Transportation, Airports Division, Kauai District	Dispatch HDOT-AIR-K/ARFF fire and emergency vehicles in respond to emergencies and incidents at the Lihue Airport.

The Hawaiian language uses two diacritical markings. The 'okina is a glottal stop; and the kahako is a macron. The State of Hawaii strongly encourages the use of Hawaiian diacritical markings. The National ITS Architecture tool, Turbo Architecture, does not allow for the Hawaiian diacritical markings to be input and as such, customized service package diagrams, operational concepts and other outputs from Turbo are unable to reflect the diacritical markings. To ensure consistency in this ITS Architecture website, no Hawaiian diacritical markings will be used.